

AMENDMENTS TO THE DRAWINGS

Attached hereto are two (2) replacement drawing sheets that comply with the provisions of 37 C.F.R. § 1.84. The replacement drawing sheets incorporate the following drawing changes:

In Fig. 9, reference numeral --53-- has been added to indicate a piston; and

In Fig. 10, reference numeral "51" has been amended to --45--.

It is respectfully requested that the replacement drawing sheets be approved and made a part of the record of the above-identified application.

REMARKS

Claims 1-8 are pending in the application. New claims 6-8 have been added.

Specification

Minor changes have been made to the specification to place it in better form for U.S. practice.

Drawings

Minor changes have been made to Figs. 9 and 10 so that they are consistent with the disclosure of the present application.

The Examiner is respectfully requested to approve and enter these drawing changes.

Claim Rejections - 35 U.S.C. § 103

Claims 1-5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Sanshin (JP 2001336407) in view of Voll et al. (USP 4,713,704). This rejection is respectfully traversed.

As acknowledged by the Examiner in the Office Action, Sanshin fails to disclose “wherein one of said rocker shafts which requires to have a higher stiffness has a larger diameter.”

Therefore, the Examiner relies on the Voll reference to show that it teaches this missing feature.

Applicants respectfully submit that one of ordinary skill in the art would not be even motivated to combine a reference directed to an engine structure with a reference directed to a

disk storage spindle arrangement. Moreover, the Sanshin reference does not even suggest combining an engine technology with a disk storage spindle technology.

Further, in the claimed invention of the present application, the intake-side rocker arm is supported on the intake-side rocker shaft and the exhaust-side rocker arm is supported on the exhaust-side rocker shaft. Because the rocker arms make contact with cams and valves, a large force is constantly applied to the rocker shafts. Therefore, it is crucial that the rocker shafts be prevented from curving or twisting due to such force (see page 19, paragraph [0068] of the specification). Further, it is known in the art that rocker shafts are non-rotating shafts.

In contrast, Voll merely discloses a shaft 1, which is merely supported by bearings 2 and 3. The shaft 1 is a rotating shaft. The shaft 1 does not support any element, corresponding to the rocker arms of the present application, that receives a large external force. Further, from the context of the statements in Voll, the diameter of the shaft is increased to increase the overall stiffness of the entire system and not to prevent the shaft from curving and/or twisting (see col. 4, lines 23-38).

Therefore, Voll fails to disclose or suggest “wherein one of said rocker shafts which requires to have a higher stiffness has a larger diameter to prevent said one of the rocker shafts from at least one of curving and twisting due to external force incurred to one of said intake-side rocker arms and said exhaust-side rocker arms,” as required by claim 1.

Claims 2-5, variously dependent on claim 1, are allowable at least for their dependency on claim 1.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

New Claims

New claims 6 and 7, dependent on claim 3, are allowable at least for their dependency on claim 3.

New claim 8 is allowable at least because none of the prior art or record discloses or suggests that “one of said rocker shafts which requires to have a higher stiffness has a larger diameter and has an oil channel having a larger diameter.”

Although Sanshin discloses in Figs. 2 and 5, oil channels that extend in a longitudinal direction of the intake and exhaust rocker shafts, the diameter of both oil channels are the same.

Voll merely discloses a solid shaft and does not have a channel that extends in a longitudinal direction thereof.

Therefore, even assuming that these references can be combined, which Applicants do not admit, one of skill in the art would not conceive wherein “one of said rocker shafts which requires to have a higher stiffness has a larger diameter and has an oil channel having a larger diameter,” as required in claim 8.

A favorable determination by the Examiner and allowance of these new claims is earnestly solicited.

Conclusion

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and objections, and allowance of the pending claims are earnestly solicited.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Maki Hatsumi (#40,417) at the

telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: June 13, 2006

Respectfully submitted,

for By  (reg # 40,417)
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Attachments: Two (2) Replacement Drawing Sheets - Figs. 9 and 10